

wind and other weather conditions expected, to fly to that airport and thereafter to fly for three hours at normal cruising fuel consumption.

[Doc. No. 6258, 29 FR 19222, Dec. 31, 1964, as amended by Amdt. 121-10, 30 FR 10025, Aug. 12, 1965; Amdt. 121-251, 60 FR 65935, Dec. 20, 1995]

**§ 121.645 Fuel supply: Turbine-engine powered airplanes, other than turbo propeller; flag and supplemental operations.**

(a) Any flag operation within the 48 contiguous United States and the District of Columbia may use the fuel requirements of § 121.639.

(b) For any certificate holder conducting flag or supplemental operations outside the 48 contiguous United States and the District of Columbia, unless authorized by the Administrator in the operations specifications, no person may release for flight or takeoff a turbine-engine powered airplane (other than a turbo-propeller powered airplane) unless, considering wind and other weather conditions expected, it has enough fuel—

(1) To fly to and land at the airport to which it is released;

(2) After that, to fly for a period of 10 percent of the total time required to fly from the airport of departure to, and land at, the airport to which it was released;

(3) After that, to fly to and land at the most distant alternate airport specified in the flight release, if an alternate is required; and

(4) After that, to fly for 30 minutes at holding speed at 1,500 feet above the alternate airport (or the destination airport if no alternate is required) under standard temperature conditions.

(c) No person may release a turbine-engine powered airplane (other than a turbo-propeller airplane) to an airport for which an alternate is not specified under § 121.621(a)(2) or § 121.623(b) unless it has enough fuel, considering wind and other weather conditions expected, to fly to that airport and thereafter to fly for at least two hours at normal cruising fuel consumption.

(d) The Administrator may amend the operations specifications of a certificate holder conducting flag or supplemental operations to require more

fuel than any of the minimums stated in paragraph (a) or (b) of this section if he finds that additional fuel is necessary on a particular route in the interest of safety.

(e) For a supplemental operation within the 48 contiguous States and the District of Columbia with a turbine engine powered airplane the fuel requirements of § 121.643 apply.

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**§ 121.647 Factors for computing fuel required.**

Each person computing fuel required for the purposes of this subpart shall consider the following:

(a) Wind and other weather conditions forecast.

(b) Anticipated traffic delays.

(c) One instrument approach and possible missed approach at destination.

(d) Any other conditions that may delay landing of the aircraft.

For the purposes of this section, required fuel is in addition to unusable fuel.

**§ 121.649 Takeoff and landing weather minimums: VFR: Domestic operations.**

(a) Except as provided in paragraph (b) of this section, regardless of any clearance from ATC, no pilot may takeoff or land an airplane under VFR when the reported ceiling or visibility is less than the following:

(1) For day operations—1,000-foot ceiling and one-mile visibility.

(2) For night operations—1,000-foot ceiling and two-mile visibility.

(b) Where a local surface restriction to visibility exists (e.g., smoke, dust, blowing snow or sand) the visibility for day and night operations may be reduced to ½ mile, if all turns after takeoff and prior to landing, and all flight beyond one mile from the airport boundary can be accomplished above or outside the area of local surface visibility restriction.

(c) The weather minimums in this section do not apply to the VFR operation of fixed-wing aircraft at any of the locations where the special weather minimums of § 91.157 of this chapter are

not applicable (See part 91, appendix D, section 3 of this chapter). The basic VFR weather minimums of §91.155 of this chapter apply at those locations.

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**§ 121.651 Takeoff and landing weather minimums: IFR: All certificate holders.**

(a) Notwithstanding any clearance from ATC, no pilot may begin a takeoff in an airplane under IFR when the weather conditions reported by the U.S. National Weather Service, a source approved by that Service, or a source approved by the Administrator, are less than those specified in—

(1) The certificate holder's operations specifications; or

(2) Parts 91 and 97 of this chapter, if the certificate holder's operations specifications do not specify takeoff minimums for the airport.

(b) Except as provided in paragraph (d) of this section, no pilot may continue an approach past the final approach fix, or where a final approach fix is not used, begin the final approach segment of an instrument approach procedure—

(1) At any airport, unless the U.S. National Weather Service, a source approved by that Service, or a source approved by the Administrator, issues a weather report for that airport; and

(2) At airports within the United States and its territories or at U.S. military airports, unless the latest weather report for that airport issued by the U.S. National Weather Service, a source approved by that Service, or a source approved by the Administrator, reports the visibility to be equal to or more than the visibility minimums prescribed for that procedure. For the purpose of this section, the term "U.S. military airports" means airports in foreign countries where flight operations are under the control of U.S. military authority.

(c) If a pilot has begun the final approach segment of an instrument approach procedure in accordance with paragraph (b) of this section and after that receives a later weather report indicating below-minimum conditions,

the pilot may continue the approach to DH or MDA. Upon reaching DH or at MDA, and at any time before the missed approach point, the pilot may continue the approach below DH or MDA and touch down if—

(1) The aircraft is continuously in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers, and where that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing;

(2) The flight visibility is not less than the visibility prescribed in the standard instrument approach procedure being used;

(3) Except for Category II or Category III approaches where any necessary visual reference requirements are specified by authorization of the Administrator, at least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:

(i) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable.

(ii) The threshold.

(iii) The threshold markings.

(iv) The threshold lights.

(v) The runway end identifier lights.

(vi) The visual approach slope indicator.

(vii) The touchdown zone or touchdown zone markings.

(viii) The touchdown zone lights.

(ix) The runway or runway markings.

(x) The runway lights; and

(4) When the aircraft is on a straight-in nonprecision approach procedure which incorporates a visual descent point, the aircraft has reached the visual descent point, except where the aircraft is not equipped for or capable of establishing that point, or a descent to the runway cannot be made using normal procedures or rates of descent if descent is delayed until reaching that point.

(d) A pilot may begin the final approach segment of an instrument approach procedure other than a Category II or Category III procedure at